

SUBSECTION 8.13

## Waste Management

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## 8.13 Waste Management

### 8.13.1 Introduction

This subsection evaluates the potential effects on human health and the environment from nonhazardous and hazardous waste generated at the San Francisco Energy Reliability Project (SFERP) and from potential hazardous and nonhazardous wastes in the soil and groundwater as a result of historic site activities. Subsection 8.13.2 presents laws, ordinances, regulations, and standards (LORS) that apply to wastes that will be generated during construction and operation of the project as well as to remediation and disposal of contaminated soil and groundwater. Subsection 8.13.3 describes the current condition of the proposed site and plans for remediation of existing soil and groundwater contamination within the project area. Subsection 8.13.4 describes the wastes that are expected to be generated by the project. Subsection 8.13.5 describes recycling goals and waste disposal sites for nonhazardous and hazardous waste.

Subsection 8.13.6 describes methods that will be employed to manage the waste generated during construction and operation of the SFERP, as well as potential wastes in the soil and groundwater. Section 8.13.6 also discusses how the potential impacts of such wastes on the environment will be mitigated. Subsection 8.13.7 discusses cumulative impacts. Subsection 8.13.8 describes monitoring that would be conducted to ensure that recycling goals are met, wastes are handled and disposed of in a legally appropriate manner, and that there is no unacceptable exposure to hazardous wastes in the soil and groundwater during operation. Subsection 8.13.9 describes agencies that have jurisdiction over the generated waste and specifies the contact person in those agencies. Subsection 8.13.10 describes permits required for generated waste and a schedule for obtaining those permits, and Subsection 8.13.11 provides the references used to prepare this subsection.

### 8.13.2 Laws, Ordinances, Regulations, and Standards

At SFERP, nonhazardous and hazardous waste handling will be governed by federal, state, and local laws, ordinances, regulations, and standards. Applicable laws and regulations address proper waste handling, storage, and disposal practices to protect the environment from contamination and to protect facility workers and the surrounding community from exposure to nonhazardous and hazardous waste. Table 8.13-1 presents a summary of the LORS applicable to waste handling at the SFERP facility. In addition, there is known soil and groundwater contamination within the project site that will require mitigation prior to (or during) construction of the project. The local ordinance applicable to this mitigation is also summarized in Table 8.13-1.

#### 8.13.2.1 Federal

The federal statute that regulates both nonhazardous and hazardous waste is the Resource Conservation and Recovery Act (RCRA) contained in Title 42 of the United States Code (USC) Section 6901, et seq. RCRA's implementing regulations are contained in Title 40 of the Code of Federal Regulations, Section 260, et seq. Subtitle D assigns responsibility for the regulation of nonhazardous waste to the states; federal involvement is limited to establishing minimum criteria that prescribe the best practicable controls and monitoring

**TABLE 8.13-1**  
**Laws, Ordinances, Regulations, and Standards Applicable to SFERP Waste Management**

<b>LORS</b>	<b>Purpose</b>	<b>Applicability (AFC Section Explaining Conformance)</b>
<b>Federal</b>		
Resource Conservation and Recovery Act (RCRA) Subtitle D (Pub. L. 94-580, 42 U.S.C. 6901 et seq.) Solid Waste (40 CFR 239-259)	Regulates design and operation of solid waste landfills where nonhazardous wastes from construction and operation of the SFERP that are not recycled will be disposed.	Solid waste will be collected and disposed of by a collection company at a solid waste landfill that is permitted in conformance with Subtitle D (Subsections 8.13.6.1.2, 8.13.6.2.1, and 8.13.7).
RCRA Subtitle C (Pub. L. 94-580, 42 U.S.C. 6921 et seq.) Hazardous Waste (40 CFR 260-299)	Controls storage, transportation, treatment, and disposal of hazardous waste.	Contractors will handle hazardous waste in conformance with Subtitle C (Subsections 8.13.6.1.4, 8.13.6.2.2, and 8.13.7).
Clean Water Act (CWA) (33 U.S.C. 1251 et seq.) Water Programs (40 CFR 100-149)	Controls discharge of wastewater to the surface waters of the U.S.	Industrial and sanitary wastewater will be discharged to the San Francisco combined sewer system (Subsections 8.13.6.1.3 and 8.13.6.2.1).
<b>State</b>		
California Integrated Waste Management Act (CIWMA) (California Public Resources Code, Section 40000 et seq.) California Integrated Waste Management Board (14 CCR 17000 et seq.)	Controls solid waste collectors, recyclers, and depositors. Mandates local jurisdictions to meet diversion, or recycling, goals of 25 percent by 1995 and 50 percent by the year 2000.	Solid waste will be collected and recycled or disposed of by a collection company in conformance with the CIWMA (Subsections 8.13.6.1.3, 8.13.6.2.1, and 8.13.7).
Hazardous Waste Control Law (HWCL) (California Health and Safety Code, Chapter 6.5)	Controls storage, transportation, treatment, and disposal of hazardous waste.	Hazardous waste will be handled in conformance with the HWCL (Subsections 8.13.6.1.4, 8.13.6.2.2, and 8.13.7).
Environmental Health Standards for the Management of hazardous Waste (22 CCR 66001 et seq.)	Controls storage transportation treatment, and disposal of hazardous waste.	Hazardous waste will be handled in conformance with the Title 22 regulations. (Subsections 8.13.6.14, 8.13.6.2.2, and 8.13.7)
Porter-Cologne Water Quality Control Act (California Water Code, Section 13000 et seq.)	Controls discharge of wastewater to surface waters and groundwaters of California.	Industrial and sanitary wastewater will be discharged to the San Francisco combined sewer system (Subsections 8.13.6.1.3 and 8.13.6.2.1).
Asbestos Airborne Toxic Control Measure (California Air Resources Board Regulation) (17 CCR 93106)	Requires implementation of standard dust control measures for projects that disturb less than one acre of soil or rock containing asbestos and preparation of an asbestos dust mitigation plan for projects disturbing an area greater than one-acre.	If applicable, standard dust control measures will be implemented or an asbestos dust mitigation plan will be prepared in accordance with the measure (Subsection 8.13.6.1.2).

**TABLE 8.13-1**  
**Laws, Ordinances, Regulations, and Standards Applicable to SFERP Waste Management**

<b>LORS</b>	<b>Purpose</b>	<b>Applicability (AFC Section Explaining Conformance)</b>
Hazardous Waste Source Reduction and Management Review Act of 1989 22CCR §67100.1 et seq	Requires generators of hazardous waste above threshold quantities to prepare a source reduction plan and submit a performance report documenting waste recycling and minimization efforts.	If the SFERP generates hazardous wastes in excess of threshold quantities, the City will file the required documentation (Subsections 8.13.2.2, 8.13.6.2, and 8.13.8)
California Fire Code	Controls storage of hazardous materials and wastes and the use and storage of flammable/combustible liquids as well as the handling of asbestos and asbestos-containing materials during building demolition.	Wastes will be accumulated and stored and asbestos containing materials will be in accordance with Fire Code requirements. Permits for storage of hazardous waste and asbestos related work will be obtained, as needed, from the San Francisco Fire Department (Subsection 8.13.10).
<b>Local</b>		
Bay Area Air Quality Management District Regulation 11-2	Requires notification to the Bay Area Air Quality Management District 10 days prior to commencement of demolition activities whether or not the project will disturb asbestos containing materials.	If applicable, the Bay Area Air Quality Management District will be notified of demolition activities in accordance with Regulation 11-2 (Subsection 8.13.6.1.1).
Chapter 34, Section 3407 of the San Francisco Building Code	Establishes requirements for property owners and contractors who engage in activities that remove or disturb lead-based paint on the exteriors of buildings and steel structures.	If applicable, the SFERP will comply with Chapter 36 of the San Francisco Building Code during demolition (Subsection 8.13.6.1.1).
San Francisco General Plan, Environmental Protection Element, Objective 19	Promotes source reduction through reduced use of hazardous materials and generation of hazardous wastes.	The SFERP will minimize the use of hazardous materials and recycle as much waste as possible (Subsections 8.13.6 and 8.13.7).
San Francisco General Plan, Environmental Protection Element, Objective 21	Controls illegal disposal and eliminates land disposal of untreated waste by requiring legal disposal of waste and encouraging enforcement actions against generators who dispose of hazardous wastes illegally.	The SFERP will legally dispose of all hazardous waste and will recycle as much of this waste as possible (Subsections 8.13.6.1.2, 8.13.6.1.4, and 8.13.6.2.2).
San Francisco Source Reduction and Recycling Element of the County Integrated Waste Management Plan	Specifies how the City and County would achieve waste diversion goals of 25 percent by 1995 and 50 percent by 2000, including requirements for source reduction and recycling.	The SFERP will comply with the goals of the Source Reduction and Recycling Element (Subsections 8.13.6.1.3, 8.13.6.2.1, and 8.13.7).
City and County of San Francisco Resolution 679-02	Establishes a citywide goal of 75 percent recycling by 2010 and a long-term goal of zero waste.	The SFERP will comply with the City and County of San Francisco recycling goal (Subsections 8.13.6.1.3, 8.13.6.2.1, 8.13.7, and 8.13.8).
City and County of San Francisco Resolution 002-03-COE	Establishes a citywide goal of zero waste production by 2020.	The SFERP will comply with the City and County of San Francisco recycling goal (Subsections 8.13.6.1.3, 8.13.6.2.1, 8.13.7, and 8.13.8).

TABLE 8.13-1

Laws, Ordinances, Regulations, and Standards Applicable to SFERP Waste Management

LORS	Purpose	Applicability (AFC Section Explaining Conformance)
City and County of San Francisco Hazardous Waste Management Plan	Provides guidance for local management of hazardous waste.	The SFERP will comply with the County's Hazardous Waste Management Plan (Subsections 8.13.6.1.4, 8.13.6.2.2, and 8.13.7).
San Francisco Health Code, Article 6	Provides regulatory requirements for garbage and refuse collection and transfer stations in the City and County of San Francisco.	Refuse collection will comply with the requirements of Article 6 (8.13.6.1.3 and 8.13.6.2.1).
San Francisco Public Health Code, Article 21	Requires preparation of a Hazardous Materials Business Plan (HMBP) for storage of hazardous materials, including hazardous wastes. Also requires owner to close the facility in accordance with an approved closure plan.	An HMBP will be prepared for submittal to the San Francisco Department of Public Health and a closure plan will be prepared and implemented upon closure of the facility (Sections 8.13.6.1.4, 8.13.6.2.2, and 8.13.6.3.2)
San Francisco Health Code, Article 22	Specifies requirements for hazardous waste management in San Francisco.	Hazardous wastes produced during construction and operation will be managed in accordance with Article 22 (Subsections 8.13.6.1.4, 8.13.6.2.2, and 8.13.8).
San Francisco Health Code, Article 22A	Previously referred to as the "Maher Ordinance," requires a site history, soil investigation, and mitigation plan for site contamination for sites bayward of the historic high tide line that require excavation of 50 cubic yards or more of soil.	A site history has been completed. The SFERP will implement a site investigation and prepare a site mitigation plan and maintenance plan if required (Subsections 8.13.6.1.2, 8.13.6.2.3, and 8.13.8).
San Francisco Public Works Code, Article 4.1	Establishes discharge limitations for industrial wastewater discharges to the combined sewer system and requires a permit for discharge.	Groundwater produced during dewatering and nonhazardous wastewater produced during construction and operation of the SFERP will be discharged to the combined sewer system in accordance with the requirements of this article (Subsections 8.13.6.1.3, 8.13.6.2.1, and 8.13.8).
City and County of San Francisco Department of Public Works Order No. 158170	Specifies discharge limitations for discharge to the combined sewer system in addition to those specified in Article 4.1.	Groundwater produced during dewatering and nonhazardous wastewater produced during construction and operation of the SFERP will be discharged to the combined sewer system in accordance with the requirements of this order (Subsections 8.13.6.1.3, 8.13.6.2.1, and 8.13.8).

requirements for solid waste disposal facilities where nonhazardous waste from the SFERP that is not recycled will be disposed. Subtitle C controls the generation, transportation, treatment, storage, and disposal of hazardous waste through a comprehensive "cradle-to-grave" system of hazardous waste management techniques and requirements. It applies to all states and to all hazardous waste generators (above certain levels of waste produced). The SFERP will conform to this law in its generation, storage, transportation,

and disposal of any non-hazardous and hazardous waste generated at the facility. The United States Environmental Protection Agency (USEPA) has delegated its authority for implementing the law to the State of California.

The USEPA regulates wastewater under the Clean Water Act (CWA). The discharge of cooling tower blowdown, industrial wastewater, and sanitary wastewater to the San Francisco combined sewer system would be regulated by this act, which is described in more detail in Subsection 8.14, Water Resources.

### 8.13.2.2 State

In California, nonhazardous solid waste is regulated by the California Integrated Waste Management Act (CIWMA) of 1989, found in Public Resources Code (PRC) Section 40000, et seq. This law provides an integrated statewide system of solid waste management by coordinating state and local efforts in source reduction, recycling, and land disposal safety. It mandates local jurisdictions to meet diversion, or recycling, goals of 25 percent by 1995 and 50 percent by the year 2000. In accordance with this law, counties are required to submit Integrated Waste Management Plans to the state. This law directly affects the City and County of San Francisco and the solid waste hauler and disposer that will collect SFERP solid waste.

RCRA allows states to develop their own programs to regulate hazardous waste, provided that they are at least as stringent as RCRA. California's hazardous waste program is contained in the California Hazardous Waste Control Law (HWCL) specified in Health and Safety Code Section 25100, et seq. The HWCL is more stringent than RCRA and regulates additional hazardous wastes that are not classified as hazardous under RCRA. Because California has its own hazardous waste control law, hazardous waste management during construction and operation of the SFERP facility will be subject to, and comply with, the HWCL.

The Hazardous Waste Source Reduction and Management Review Act of 1989, specified in Title 22 of the California Code of Regulations, section 67100.1, et seq, requires facilities generating hazardous wastes in excess of 5,000 kilograms or 5 kilograms of extremely hazardous waste to examine their waste generating processes to determine the amounts and types of wastes generated; determine waste minimization procedures to reduce waste generation at the source; develop a Hazardous Waste Source Reduction and Evaluation Plan; and prepare a hazardous waste performance report. The SFERP will prepare the required planning and documentation.

Wastewater is regulated under the Porter-Cologne Water Quality Control Act by the State Water Resources Control Board and Regional Water Quality Control Board. Cooling tower blowdown, industrial wastewater, and sanitary wastewater discharged to the San Francisco combined sewer system would be subject to this act, which is described in more detail in Subsection 8.14, Water Resources.

The California Air Resources Board (CARB) adopted the Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (CARB, 2002) which became effective in the Bay Area Air Quality Management District (BAAQMD) on November 19, 2002. The ATCM requires use of best available dust mitigation measures to prevent offsite migration of asbestos-containing dust from road

construction and maintenance activities, construction and grading operations, and quarrying and surface mining operations in areas of ultramafic rock (ultramafic rocks are formed in high temperature environments well below the surface of the earth), serpentine (serpentine is a naturally occurring group of minerals that can be formed when ultramafic rocks are metamorphosed during uplift to the earth's surface. Serpentinite is a rock consisting of one or more serpentine minerals, formed when ultramafic rocks are metamorphosed. This rock type is commonly associated with ultramafic rock along faults such as the Hayward Fault. Small amounts of chrysotile asbestos, a fibrous form of serpentine minerals, are common in serpentinite), or asbestos (asbestos is a term used for several types of naturally occurring fibrous materials found in many parts of California). The BAAQMD implements the regulation. As discussed in Subsection 8.15, Geology, the SFERP site is located in the Hunters Point Shear Zone within the Franciscan Complex. Bedrock within this zone is primarily comprised of serpentinite. Alluvial deposits that overlay the Franciscan bedrock at the site were derived from topographic highs around the site that would also be comprised of serpentinite-containing bedrock. Artificial fill used at the site may have also been derived from this bedrock. If asbestos is present in the fill or bedrock that will be excavated for this project, the Asbestos ATCM would apply.

### 8.13.2.3 Local

**8.13.2.3.1 Nonhazardous Solid Waste Management.** The San Francisco Department of Public Health (SFPDH) will be responsible for administering and enforcing Article 6 of the San Francisco Health Code for solid, nonhazardous waste produced during construction and operation of the SFERP. The project will also implement source reduction and recycling efforts to help San Francisco meet its goal of 75 percent landfill diversion by 2010 in accordance with Resolution 679-02; and zero waste production by 2020 in accordance with Resolution 002-03-COE.

**8.13.2.3.2 Hazardous Waste and Closure.** Hazardous waste management will be subject to the requirements of Article 22 of the San Francisco Health Code, Hazardous Waste Management. This article authorizes the SFPDH to implement the requirements of the HWCL related to hazardous waste generators in San Francisco. In accordance with this article, the SFPDH has the authority to conduct inspections of any facilities where hazardous wastes are stored, handled, processed, disposed of, or treated to recover resources and must maintain records to document compliance with the HWCL.

Hazardous wastes generated at the facility would be described in the Certificate of Registration and Hazardous Materials Plan prepared for the facility in accordance with Article 21 of the San Francisco Health Code. This article is described in more detail in Subsection 8.12, Hazardous Materials. Section 1154 of Article 21 also specifies requirements for closure of the facility. In accordance with Article 21, the SFPUC would prepare and implement the required closure plan.

**8.13.2.3.3 Discharge of Wastewater.** The discharge of nonhazardous wastewater would be subject to the requirements of Article 4.1 of the San Francisco Public Works Code and the San Francisco Department of Public Works Order No. 158170 that regulate the quantity and quality of industrial discharges to the combined sewer system. In accordance with these, A Class I discharge permit from the Department of Public Works would be required. In addition, under this ordinance, any dewatering effluent produced during construction would require a permit

for discharge to the combined sewer system. The requirements of Article 4.1 and Order 158170 are described in more detail in Subsection 8.14, Water Resources.

**8.13.2.3.4 Requirements for Site Investigation.** Because the proposed location of the SFERP and much of the wastewater line are located bayward of the historic tideline and would involve the excavation of greater than 50 cubic yards of soil, Article 22A of the San Francisco Health Code, implemented by the SFDPH, would apply to construction of the SFERP. This article protects the health and safety of the workers, residents, and occupants from risks associated with hazardous wastes in the soil by requiring a site assessment and mitigation of any risks identified as a condition for construction of a planned project. The requirements will be triggered by a building permit application or equivalent. The City of San Francisco is not subject to the Building Code.

**8.13.2.3.5 Hazardous Building Materials.** Demolition of the Station A buildings may or may not be a part of the SFERP project. If it is, it will be subject to the notification requirements of BAAQMD Regulation 11-2. This regulation includes specific notification requirements for demolition projects whether or not asbestos-containing materials will be disturbed during demolition and specifies requirements applying to asbestos abatement activities. If demolition is part of the project, the project will be subject to the requirements of this regulation because it will include demolition.

Chapter 34, Section 3407 of the San Francisco Building Code includes requirements for projects that disturb lead-based paint on the exterior of buildings or steel structures. This code protects the health and safety of the workers, residents, and occupants from risks associated with lead-based paint by including specific requirements to control lead-based paint during demolition activities. If demolition is part of the project and there is lead-based paint on exterior or steel surfaces to be demolished, this code will apply to the project.

#### 8.13.2.4 Codes

The design, engineering, and construction of hazardous waste storage and handling systems will be in accordance with all applicable codes and standards, including:

- The Uniform Fire Code
- The Uniform Building Code
- The Uniform Plumbing Code
- California Building Code
- California Fire Code
- San Francisco Health Code
- San Francisco Municipal Code

### 8.13.3 Environmental Condition of Site

The existing Potrero Power Plant has historically been used for various industrial operations since the late 1800s. These include a sugar refining company, barrel manufacturing facility, and a manufactured gas plant. Residues generated from the former site operations consist primarily of oil and coal tar wastes and chemicals associated with these wastes have been identified in soil, groundwater, and sediments at the Potrero Power Plant site.



In 2000, a database review conducted for the Southern Waterfront Supplemental Environmental Impact Report (EIR), a supplement to the Port of San Francisco's Waterfront Land Use Plan EIR, identified the Potrero Power Plant in several environmental databases, summarized in Table 8.13-2. The entire facility is undergoing investigation and cleanup under regulatory oversight of the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) as the lead agency. Site assessments and investigations of soil and groundwater quality have been ongoing since 1991. The results of these investigations that are relevant to the project site are discussed below. Rights and responsibilities for investigation and cleanup at the site are also addressed in a private agreement between the former and current owners of the site.

**TABLE 8.13-2**  
Environmental Databases that the Potrero Power Plant has been Identified In

<b>Database and Acronym</b>	<b>Description</b>
RCRA Corrective Action Sites (CORRACTS)	RCRA permitted facilities that are undergoing corrective action
RCRA Violation Sites (RCRA Viol)	RCRA permitted facilities with violations
CalSites (SCL)	Potential hazardous waste sites identified by the DTSC
Comprehensive Environmental Response, Compensation, and Liability Information System No Further Action Planned (CERCLIS NFRAP) –	Sites previously identified under CERCLIS but designated for no further action.
Leaking Underground Storage Tanks (LUST)	Sites with leaking underground storage tanks
Cortese Hazardous Waste and Substances Site List (CORTESE)	A compilation of sites listed in the LUST and other databases
Emergency Response Notification System (ERNS)	These cases are usually spills or releases of chemicals reported to federal authorities

Source : VISTA Information Solutions, 2000.

The 4.5-acre project site is located within the southwestern part of the Potrero Power Plant. The sugar refining company, barrel manufacturing facility, and manufactured gas plant all historically operated within the project site. A portion of the site was also used as a satellite hazardous waste accumulation area and another portion formerly contained an oil tank used to store dielectric fluids (likely to contain PCBs). Spills may have also occurred within the project area.

On the basis of investigations conducted in 1998 and 2000 (Phase I and II Environmental Site Assessment prepared for the Mirant Unit 7 proceeding) localized areas of soil and groundwater have been affected by chemical releases from past activities. The chemicals of concern in the soil include total petroleum hydrocarbons (TPH) at a maximum concentration of 11,600 milligrams per kilogram (mg/kg); polynuclear aromatic hydrocarbons (PAHs) at a maximum concentration of 4,573 mg/kg; and cyanide at a maximum concentration of 26.7 mg/kg. In addition, soil throughout much of the site contains several metals at concentrations greater than background or industrial preliminary remediation goals (PRGs). The chemicals of concern identified in the groundwater include benzene at a maximum concentration of 0.0149 milligrams per liter (mg/L); total petroleum hydrocarbons at a maximum concentration of 38.9 mg/L; PAHs at a maximum concentration of 0.389 mg/L; and cyanide at maximum concentration of 4.8 mg/L. Dense

non-aqueous phase liquids (DNAPLs) and light non-aqueous phase liquids (LNAPLs) that have been identified in the northeast portion of the Potrero Power Plant site have not been detected within the SFERP project site. Previous investigation of a portion of the project site did not indicate the presence of asbestos in the materials sampled.

The project may include demolition of two existing masonry buildings, Station A and the compressor house, referred to in this section as the Station A buildings. Surveys to identify hazardous building materials such as asbestos-containing materials, lead-based paint, and PCB-containing electrical equipment have been performed and the majority of the hazardous building materials have been abated and properly disposed of off-site. There is water present in the lower level of Station A although the origin of the water (surface runoff or groundwater) is not known.

### 8.13.4 Project Waste Generation

Waste will be generated at the site during facility construction and operation. Types of waste will include excavated soil, nonhazardous solid waste, groundwater produced during dewatering, nonhazardous wastewater, and liquid and solid hazardous waste.

#### 8.13.4.1 Construction Phase

During construction, the primary wastes generated will be soil excavated for construction and solid nonhazardous waste. However, some nonhazardous liquid waste and both solid and liquid hazardous waste will also be generated. The types of waste and their estimated quantities are described below.

**8.13.4.1.1 Soil.** Potentially contaminated soil would be excavated for construction of the SFERP facilities. As discussed in Subsection 8.13.3, previous sampling by the former and current site owners has identified total petroleum hydrocarbons, PAHs, cyanide, and several metals in the soil within the SFERP project boundaries. It is likely that some of the soil that would be excavated for construction of the project could contain these chemicals and could require specific storage and handling requirements during construction and possibly disposal as a hazardous waste, depending on the concentrations identified. Requirements for soil sampling, site mitigation, waste classification and disposal, and waste piles are discussed in Subsection 8.13.6.1.1.

***Asbestos Containing Soil.*** Excavation for construction of the SFERP could encounter bedrock or fill materials containing naturally occurring asbestos. Should naturally occurring asbestos-containing materials be excavated, the requirements of the Asbestos Airborne Toxics Control Measure would apply. The requirements of this measure are discussed in Subsection 8.13.6.1.2.

**8.13.4.1.2 Nonhazardous Solid Waste.** Potential nonhazardous solid waste streams and their estimated volumes are described below. Recycling goals and disposal requirements for nonhazardous solid wastes produced during construction are discussed in Subsection 8.13.6.1.3.

***Paper, Wood, Glass, and Plastics.*** Paper, wood, glass, and plastics will be generated from packing materials, waste lumber, insulation, and empty nonhazardous chemical containers. Approximately 10 tons of these wastes will be generated during project construction.

**Concrete and Masonry.** If demolition is part of the project, approximately 54,700 tons of excess concrete and masonry will be generated during construction due to demolition of the existing Station A buildings.

**Metals.** Waste metals will include steel from demolition debris, if demolition is part of the project, welding/cutting operations during construction, packing materials and empty nonhazardous chemical containers. Aluminum waste will be generated from packing materials and electrical wiring. Approximately 4,500 tons of waste metal could be generated during construction.

**8.13.4.1.3 Wastewater.** Wastewater generated during construction will include sanitary waste, stormwater runoff, equipment washdown water, waste water from pressure testing the gas supply line after it is constructed, water from excavation dewatering during construction (if dewatering is required), and water removed from the lower level of Station A. Depending on the chemical quality of these wastewaters, they could be classified as hazardous or nonhazardous. As discussed in Subsection 8.13.6.1.3, the waste waters would be sampled and if they are hazardous would be disposed of as described in Subsection 8.13.6.1.4. Methods for disposing of nonhazardous wastewaters are identified in Subsection 8.13.6.1.3.

**8.13.4.1.4 Hazardous Waste.** Most of the hazardous waste generated during construction will consist of liquid waste, such as flushing and cleaning fluids, passivating fluid (to prepare pipes for use), and solvents. Some hazardous solid waste such as welding materials, dried paint from construction activities, and possibly asbestos-containing materials and lead-based paint from hazardous building materials abatements (if conducted for this project) may also be generated. Flushing and cleaning waste liquid will be generated as pipes are cleaned and flushed. The volume of flushing and cleaning liquid waste generated is estimated to be one to two times the internal volume of the pipes cleaned. The quantity of welding, solvent, and paint waste is expected to be minimal. The quantity of asbestos-containing materials and lead-based paint produced if hazardous building material abatements are conducted as part of this project would be determined on the basis of hazardous building materials surveys conducted before demolition. Wastewaters generated during construction could also be considered hazardous, if demonstrated so by sampling described in Subsection 8.13.6.1.2. Methods for recycling and disposal of hazardous wastes during construction are identified in Subsection 8.13.6.1.4.

#### **8.13.4.2 Operation Phase**

During facility operation, the primary waste generated will be nonhazardous wastewater. However, nonhazardous solid waste and varying quantities of both solid and liquid hazardous waste will also be generated periodically. The types of waste and their estimated quantities are discussed below.

**8.13.4.2.1 Nonhazardous Solid Waste.** The facility will produce maintenance and wastes typical of power generation operations. These will include rags, turbine air filters, broken and rusted metal and machine parts, defective or broken electrical materials, empty containers, and other miscellaneous solid wastes, including the typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The quantity generated is estimated to be about 20 cubic yards per year. Recycling goals and disposal requirements for nonhazardous solid wastes are discussed in Subsection 8.13.6.2.1.

**8.13.4.2.2 Nonhazardous Wastewater.** As discussed in Subsection 8.14, Water Resources, process wastewater that will be produced during operation of the SFERP facility includes cooling tower blowdown, filter backwash, reverse osmosis concentrate, and plant drainage. Each of these process waste streams and the expected flow rate is shown on the water balance diagram presented earlier in Figures 2-3 and 2-4 and is described below. The descriptions address the ultimate discharge method for all wastewater streams produced. In addition to these process wastewater streams, the SFERP facility will generate sanitary sewage consisting of wastewater collected from sinks, toilets, and other sanitary facilities. The following sections describe these waste streams; disposal methods for the nonhazardous wastewater are discussed in Subsection 8.13.6.2.1.

**Cooling Tower Blowdown.** Cooling tower blowdown will consist of water circulated in the evaporative cooler system and residues of the water treatment chemicals added to the circulating water to control scaling and bio-fouling of the cooling tower and corrosion of the circulating water piping and condenser tubes. The blowdown will be discharged to the waste water collection system as required to maintain the level of dissolved solids of the cooling water within acceptable ranges; the number of cycles that the water is used for will be dictated by the water supply quality.

**Power Cycle Makeup Treatment Wastes.** Wastewater from the power cycle makeup water treatment system will consist of the reject stream from the reverse osmosis (RO) units, and backwash water from the ultra-filters (UF) upstream of the RO units. The UF and RO units are used to reduce the concentration of dissolved solids in the plant makeup water prior to use in the Combustion Turbine Generator (CTG) system where the process water supply is treated in the electro deionization equipment. The UFs are used as pretreatment prior to the RO units to prevent RO membrane fouling.

The wastewater stream from the power cycle makeup water treatment system will contain: 1) concentrated constituents of the recycled water; 2) residues of the chemicals added to the raw water to coagulate suspended solids prior to filtration; 3) chemicals added to the UF filtrate to eliminate free chlorine, which would damage the RO membranes; and 4) chemicals added to adjust pH for the control of membrane scaling. This water will be discharged to the waste water collection system.

**Plant Drainage.** Plant drainage will consist of area washdown, equipment leakage, and drainage from facility equipment areas. Water from these areas will be collected in a system of floor drains, sumps, and piping, and routed to the wastewater collection system. Drains that could contain oil or grease will be routed to the wastewater collection system through an oil/water separator.

There will be no discharge from the chemical tank containment areas to the waste collection system. As discussed in Subsection 8.12, Hazardous Materials, the chemical tank storage areas will be designed with containment facilities to contain potential spills. In the unlikely event of a chemical spill, the spill will be cleaned up on-site by plant personnel or by a separate contractor brought in to assist the plant with spill cleanup.

**8.13.4.2.3 Hazardous Waste.** Hazardous waste generated will include waste lubricating oil and spent lubrication oil filters from the combustion turbines and selective catalytic reduction (SCR) catalyst units. The catalyst units contain heavy metals that are considered

hazardous. A list of anticipated hazardous wastes generated at the plant is presented in Table 8.13-3. Recycling and disposal requirements for hazardous wastes are discussed in Subsection 8.13.6.2.2.

TABLE 8.13-3  
Hazardous Wastes Generated at the Facility During Operations

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Lubricating oil	Gas turbine lubricating oil system	Hydrocarbons	Small amounts from leaks and spills	Hazardous	Cleaned up using sorbent and rags – disposed of by certified oil recycler
Lubricating oil filters	Gas turbine lubricating oil system	Paper, metal, and hydrocarbons	Approximately 12 per year	Hazardous	Recycled by certified oil recycler
Laboratory analysis waste	Water treatment	Miscellaneous analysis reagent chemicals	Approximately 50 gallons per year	Hazardous	Recycled by certified recycler
Spent SCR catalyst units	SCR system	Metal and heavy metals, including vanadium	Catalyst changed out every few years	Hazardous	Recycled by SCR manufacturer or disposed of in Class I landfill
Oily rags	Maintenance, wipe down of equipment, etc.	Hydrocarbons, cloth	Approximately 800 rags per year	Hazardous	Recycled by certified oil recycler
Oil sorbents	Cleanup of small spills	Hydrocarbons	Approximately 200 pounds per year	Hazardous	Recycled or disposed of by certified oil recycler
Cooling tower sludge	Deposited in cooling tower basin by cooling water	Dirt from air, arsenic from water	200 lb/yr	Potentially hazardous, but usually not	Class II landfill if nonhazardous; Class I if hazardous
Chemical feed area drainage	Spillage, tank overflow, area washdown water	Water with water treatment chemicals	Minimal	May be hazardous if corrosive	On-site neutralization, if required, then discharged to cooling tower basin

### 8.13.5 Waste Disposal Sites

Nonhazardous solid waste (often referred to as solid waste, municipal solid waste [MSW], or garbage) will be recycled or deposited in a Class III landfill, as described in Subsection 8.13.6. Hazardous wastes, both solid and liquid, will be delivered to a permitted offsite treatment, storage, and disposal (TSD) facility for treatment or recycling, or will be deposited in a permitted Class I landfill. The following subsections describe the waste disposal sites available for disposal of SFERP wastes.

#### 8.13.5.1 Nonhazardous Solid Waste

Approximately 54,700 tons of nonhazardous demolition debris as well as other solid waste will be generated during construction of the SFERP and solid waste will continue to be generated during operation of the project. If demolition is part of the project, demolition debris will generally be recycled at a local or regional permitted recycling facility. Other

solid wastes will be recycled to the extent possible, and what can not be recycled will be disposed of at a permitted landfill as discussed below. Although the actual waste classification of the soil that will be excavated for construction of the project can not be made at this time, approximately 7,250 cubic yards of soil could require off-site disposal, much of which may be nonhazardous. Waste classification is described in Subsection 8.13.6.1.2. As described in this section, classification of the soil for disposal purposes would be made on the basis of sampling completed once the soil is excavated. Soil that is determined to be nonhazardous on the basis of the sampling conducted could be suitable for reuse at a construction site or disposal at a regional disposal facility, depending on the chemical quality.

The City and County of San Francisco has an exclusive agreement with Waste Management, Inc. (WMI) for disposal of up to 15 million tons of municipal solid waste from San Francisco at Altamont Landfill, owned and operated by WMI. As of December, 2003, approximately 10 million tons of that capacity had been used by the City leaving a balance of 5 million tons (Drew, 2003) (The agreement with WMI does not include construction and demolition debris. Thus, nonhazardous construction and demolition debris can be disposed of in any of the landfills described in Table 8.13-4.). San Francisco has reached the statewide goal of 50 percent recycling and currently approximately 700,000 to 800,000 tons of waste per year at Altamont Landfill through this contract. Efforts are underway to increase recycling rates in accordance with City Resolutions 679-02 and 002-03-COE.

According to the CIWMB, Altamont Landfill has a total capacity of 58.9 million cubic yards of refuse and the remaining capacity as of 2001 was 15.8 million cubic yards. The CWIMB indicates that the active Solid Waste Facility Permit expires in 2005. However, Altamont has obtained a Conditional Use Permit (CUP) for expanded facilities and is in the process of revising their Solid Waste Facility Permit to include an expanded area that would increase the permitted disposal capacity to 87.1 million tons (St. John, 2003). According to the CIWMB, there are no open enforcement actions against Altamont Landfill and no violations have been issued to this facility for the past 2 years (CIWMB, 2003b).

The exclusive agreement between the City and County of San Francisco and Waste Management, Inc. will expire once the total capacity of the agreement is reached. At the current disposal rate, the exclusive contract will expire by approximately 2010, although successful recycling efforts will extend the duration of this contract. Table 8.13-4 lists several California disposal facilities with the remaining capacities capable of accommodating waste from San Francisco.

TABLE 8.13-4  
Solid Waste Disposal Facilities

Landfill/MRF/ Transfer Station	Location	Class	Permitted Capacity, <sup>a</sup> (Cubic Yards)	Permitted Throughput <sup>a</sup> (Tons per Day)	Remaining Capacity <sup>a</sup> (Cubic Yards)	Estimated Closure Date <sup>a</sup>	Violation of Minimum State Standards Noted <sup>b</sup>
Altamont Landfill	Livermore, CA	III	58,900,000 <sup>c</sup>	11,150	15,843,000	1/1/2005 <sup>c</sup>	No
Kirby Canyon	San Jose, CA	III	36,400,000	2,600	57,271,507	12/31/2022	No

TABLE 8.13-4  
Solid Waste Disposal Facilities

Landfill/MRF/ Transfer Station	Location	Class	Permitted Capacity, <sup>a</sup> (Cubic Yards)	Permitted Throughput <sup>a</sup> (Tons per Day)	Remaining Capacity <sup>a</sup> (Cubic Yards)	Estimated Closure Date <sup>a</sup>	Violation of Minimum State Standards Noted <sup>b</sup>
Ox Mountain Sanitary Landfill	Half Moon Bay, CA	III	37,900,000	3,598	44,646,148	1/1/2018	No
Norcal Waste Systems Ostrom Road Landfill, Inc.	Wheaton, CA	II/III	41,822,300	3,000	11,252,490	12/31/2066	No

<sup>a</sup> Based on CIWMB Solid Waste Inventory System Database (CIWMB, 2003b).

<sup>b</sup> Based on the CIWMB *Inventory of Solid Waste Facilities Violating State Minimum Standards* (CIWMB, 2003a).

<sup>c</sup> The official permitted capacity is 58,900,000 cubic yards and the estimated closure date on record with the state is January 1, 2005 (CIWMB, 2003b); however, Altamont Landfill currently has a Conditional Use Permit for an expanded capacity and is in the process of revising its Solid Waste Facility Permit to include this information (St. John, 2003).

As discussed above, estimates of nonhazardous solid waste production, excluding demolition debris which would be recycled, are approximately 14.5 tons during construction and 20 tons per year during operation plus up to 7,250 cubic yards of soil that would be excavated during construction. Because the SFERP will incorporate a proactive recycling program to achieve the City and County recycling goals, and adequate landfill capacity exists for those wastes that cannot be recycled, disposal of solid nonhazardous waste will not be a constraint on SFERP development.

### 8.13.5.3 Hazardous Waste

Hazardous waste generated at the SFERP facility will be stored at the facility for less than 90 days. The waste will then be transported to a TSD facility by a permitted hazardous waste transporter. These facilities vary considerably in what they can do with the hazardous waste they receive. Some can only store waste, some can treat the waste to recover usable products, and others can dispose of the waste by incineration, deep-well injection, or landfilling. (Incineration and deep-well injection are not permitted in California.)

According to the California Department of Toxic Substances Control (DTSC), there are 37 facilities in California that can accept hazardous waste for treatment or disposal (DTSC, 2003a). For ultimate disposal, California has the three hazardous waste (Class I) landfills described below. The closest commercial hazardous waste disposal facility is the Kettleman Hills facility in Kettleman City.

**8.13.5.3.1 Clean Harbors' (Formerly Safety-Kleen's) Buttonwillow Landfill in Kern County.** This facility includes two active landfills. WMU-34 has a total capacity of 345,000 cubic yards and a remaining capacity of about 50,000 cubic yards; closure of this unit is expected in 2006. WMU-35 has a total capacity of 10,700,000 cubic yards and a remaining capacity of about 10,500,000 cubic yards; this unit is scheduled for closure in 2021 (Gius, 2004). This landfill is permitted to accept California and RCRA hazardous wastes.

#### 8.13.5.3.2 Clean Harbors' (Formerly Safety-Kleen's) Westmorland Landfill in Imperial County.

This facility includes one active landfill (LC-2) and two proposed landfills (LC-4, LC-5) which are permitted. LC-2 has a total capacity of 750,000 cubic yards and a remaining capacity of approximately 20,000 cubic yards; this unit is scheduled for closure in 2006. LC-4 is a permitted landfill that has not yet been constructed. It will have a total capacity of 870,000 cubic yards and is scheduled for closure in 2020. LC-5 is a permitted landfill that is scheduled for construction in 2004/2005. It will have a total capacity of 1,860,000 cubic yards. LC-5 is scheduled for closure in 2013 (Gius, 2004). This disposal facility is permitted to accept California and RCRA hazardous wastes.

**8.13.5.3.3 Waste Management's Kettleman Hills Landfill in Kings County.** This facility accepts Class I, II, and III waste. The Class I landfill is permitted for and will accept all hazardous wastes except radioactive, compressed gases, medical, and unexploded ordinance (UXO); this landfill has permitted capacity of 10.7 million cubic yards with a remaining capacity of 7.3 million cubic yards as of June 2003 (DTSC, 2003b). The permitted closure date for the Class I landfill is June 30, 2013. The Class II and III waste disposal facility has a planned closure date of 2010. It is permitted to accept up to 1,400 tons per day of solid waste and contaminated soil and the total permitted capacity is 4.2 million cubic yards (CIWMB, 2003b). As of September 2001, the remaining capacity was 3.8 million cubic yards.

**8.13.5.3.4 Additional Commercial Hazardous Waste Treatment and Recycling Facilities.** In addition to hazardous waste landfills, there are numerous offsite commercial liquid hazardous waste treatment and recycling facilities in California. Some of the closest facilities include ECS Refining in Santa Clara, Romic Environmental Technologies Corporation in East Palo Alto, Clean Harbors in San Jose, Micro Metalics Corporation in San Jose, Metech International, Inc. in Gilroy, Evergreen Oil, Inc. in Newark, Wit Refining in San Jose, Technichem in Emeryville, AERC.com, Inc. in Hayward, and Ionization Research Company, Inc. in Milpitas (DTSC, 2003a).

Because the project would emphasize recycling of hazardous wastes and adequate disposal and treatment facility capacities exist, disposal of solid and liquid hazardous wastes during construction and operation, including any soil that is classified as a hazardous waste, determined as in Subsection 8.13.6.1.2, will not be a constraint on SFERP development.

### 8.13.6 Waste Management Methods and Mitigation

The handling and management of waste generated by the SFERP will follow the hierarchical approach of source reduction, recycling, treatment, and disposal. The first priority will be to reduce the quantity of waste generated through pollution prevention methods (e.g., high-efficiency cleaning methods). The next level of waste management will involve reusing or recycling wastes (e.g., used oil recycling). For wastes that cannot be recycled, treatment will be used, if possible, to make the waste nonhazardous (e.g., neutralization). Finally, offsite disposal will be used to dispose of residual wastes that cannot be reused, recycled, or treated.

To ensure compliance with this strategy as well as legal handling and disposal of all wastes, the City will prepare separate waste management plans for the construction and operation phases of the project. The plans will include a description of all waste streams including projections of frequency, amounts generated, and hazard classifications. In addition, the



methods for managing each waste will be identified including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans. The following subsections present requirements for waste handling and disposal that will be included in the waste management plans and a description of how the project will comply with Article 22A of the San Francisco Health Code.

#### 8.13.6.1 Construction Phase

Wastes produced during construction will include soil excavated for construction of the project facilities, nonhazardous solid wastes, nonhazardous wastewater, and hazardous solid and liquid wastes. In addition, if demolition is part of the project, additional hazardous building material surveys and abatement could be required prior to demolition of the Station A buildings.

##### 8.13.6.1.1 Hazardous Building Materials Surveys and Abatement

**Asbestos.** Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition permits until an applicant has demonstrated compliance with notification requirements under applicable Federal regulations regarding hazardous air pollutants, including asbestos. The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and in accordance with Regulation 11-2, is to be notified ten days in advance of any proposed demolition or abatement work. Although the City would not be required to obtain a building permit for construction of the SFERP, they would comply with these requirements if applicable. The notification requirements include:

- The names and addresses of operations and persons responsible
- Description and location of the structure to be demolished/ altered including size, age and prior use, and the approximate amount of friable asbestos
- Scheduled starting and completion dates of demolition or abatement
- Nature of planned work and methods to be employed
- Procedures to be employed to meet BAAQMD requirements
- The name and location of the waste disposal site to be used

In addition, the City would notify the local office of the State Occupational Safety and Health Administration (Cal/OSHA) of any asbestos abatement to be carried out. Asbestos abatement contractors will be certified by the Contractors Licensing Board and will follow state regulations where there is asbestos-related work involving 100 square feet or more of asbestos containing material.

**Lead-Based Paint.** Lead-based paint was commonly used prior to 1960, and this type of paint is present in many older buildings. During demolition, where required, the City will comply with Chapter 34, Section 3407 of the San Francisco Building Code which establishes requirements for property owners and contractors who engage in activities that remove or

disturb lead-based paint on the exteriors of buildings and steel structures. The ordinance contains performance standards, including establishment of containment barriers that are at least as effective at protecting human health and the environment as those in the most recent Guidelines for Evaluation and Control of Lead-Based Paint Hazards promulgated by the U.S. Department of Housing and Urban Development.

Specific elements of this code, implemented and enforced by the San Francisco Department of Building Inspection (DBI) include a requirement for a containment barrier around any work involving lead paint. For activities involving abrasive blasting, hydroblasting, scraping, or sanding of lead-painted exterior surfaces a HEPA vacuum may be required. Burning, torching, or similar activities are prohibited. Following completion of work involving lead paint, all visible lead paint contaminants must be removed from the work site.

In addition, the ordinance requires the following notification requirements when the total area of lead paint to be disturbed or removed exceeds 10 square feet:

- Notification of the DBI prior to starting work by the owner or contractor describing the nature and location of the work;
- A posted sign at all work sites where containment is required stating that lead work is in progress and that public access is prohibited;
- A posted sign at sites where lead paint is being disturbed and lead dust or soil testing indicates the presence of contaminated soil or dust. The sign would indicate the presence of the contamination identified.

#### 8.13.6.1.2 Soil

***Article 22A Compliance and Soil Management and Disposal.*** As described in Subsection 8.13.3, the SFERP facility will be constructed within an area known to contain contaminated soil. Because the project, including the SFERP location and portions of the wastewater line, is located bayward of the historic high tide line and would involve the excavation of greater than 50 cubic yards of soil, Article 22A of the San Francisco Health Code would apply. The requirements would be triggered by the building permit application or equivalent process (the City and County of San Francisco is not subject to the Building Code). Major requirements include:

- Preparation of a site history report to describe past site uses and identify whether the site is listed as a hazardous waste site pursuant to state or federal regulations;
- Implementation of a soil investigation to evaluate the potential presence of hazardous wastes in the soil;
- Preparation of a soil analysis report that evaluates the results of chemical analysis of the soil samples;
- Preparation of a site mitigation report, if contamination is identified, assessing potential environmental and health and safety risks, recommending measures to mitigate the risks, identifying appropriate waste disposal and handling requirements, and presenting criteria for on-site reuse of soil;

- Preparation of a certification report stating that either 1) no hazardous wastes present in the soil present an unacceptable risk and that no mitigation measures are required; or 2) all mitigation measures recommended in the site mitigation report have been completed and that completion of the mitigation measures has been verified through follow-up soil sampling and analysis, if required.

Previous reports prepared on behalf of PG&E should meet the requirements of the required site history although a separate site history report will need to be prepared for those portions of the wastewater line located bayward of the historic high tide line. A project-specific soil analysis report(s) will be required to identify the concentration of chemicals present in the soil at the SFERP location and along the wastewater pipeline alignment that would be excavated for construction. The report(s) will be prepared by knowledgeable, certified professionals and provide information on historic and current hazardous waste contamination at the property. The soil analysis report will be submitted to the SFDPH, and the SFBRWQCB. Based on the soil analysis report, the City will prepare a site mitigation plan that: 1) assesses potential environmental and health and safety risks; 2) recommends mitigation measures, if any are necessary, that would be protective of workers and visitors to the SFERP facility; 3) recommends measures to mitigate the risks identified; 4) identifies appropriate waste disposal and handling requirements; and 5) presents criteria for on-site reuse of soil. The recommended measures will be completed during construction and upon completion, the City will prepare a certification report stating that all mitigation measures recommended in the site mitigation report have been completed and that completion of the mitigation measures has been verified through follow-up soil sampling and analysis, if required. If the soil sampling report does not indicate a potential risk to future site visitors and workers, then no mitigation will be required and the certification report will state that hazardous materials present in the soil do not present an unacceptable risk and that no mitigation measures are required. A deed restriction may be required if hazardous waste levels remain on site in the subsurface.

The construction contract for the project will also include a provision that if previously unidentified areas of contamination are identified during construction, as indicated by discolored soil, odor, or some other condition, the contractor shall have a soil sample taken and submitted for laboratory analysis and stop work in that particular area until the results of the soil sample are known and proper material handling instructions can be determined. Waste Classification and Disposal.

In accordance with California Code of Regulations, Title 22, Sections 66260 through 66261.10, the excavated soil will be classified as a hazardous waste if it exhibits the characteristics of ignitability, corrosivity, reactivity, or toxicity. A waste is considered toxic in accordance with 22CCR S66261.24 if it contains certain metals or organic substances at soluble concentrations greater than federal toxicity regulatory levels using a test method called the toxicity characteristic leaching procedure (TCLP); if it contains total concentrations of certain substances at concentrations greater than the total threshold limit concentration (TTLC) or soluble concentrations greater than the soluble threshold limit concentration (STLC); if it contains specified carcinogenic substances at a single or combined concentration of 0.001 percent; or if toxicity testing indicates toxicity greater than specified criteria. The TCLP, TTLC, and STLC criteria are summarized in Table 8.13-5 with the maximum concentration of each chemical previously identified in the site soil.

TABLE 8.13.5  
Soil Disposal Criteria and Maximum Detected On-site Concentration

Metal	Maximum Concentration, mg/kg	Waste Disposal Criteria		
		Regulatory Level <sup>a</sup> (mg/L)	TTLC <sup>b</sup> (mg/kg)	STLC <sup>c</sup> (mg/L)
Arsenic	52.8	5	500	5
Beryllium	5.8	-	-	-
Trivalent Chromium	1,656.7	5	2,500	5
Hexavalent Chromium	Not determined <sup>d</sup>	-	500	5
Lead	1,101.5	5	1,000	5

<sup>a</sup> The regulatory level refers to the soluble concentration of a waste constituent determined using the toxicity characteristic leaching procedure (TCLP). A waste would be considered hazardous by federal regulations if the soluble concentration of a chemical in the TCLP extract exceeded the federal regulatory level specified. Because the TCLP involves a 20-to-1 dilution of the sample, the total concentration of a substance in the soil would need to exceed 20 times the regulatory level for the soluble concentration to possibly be greater than the regulatory level in the extract.

<sup>b</sup> TTLC = total threshold limit concentration. A waste would be considered hazardous by state regulations if the total concentration of a chemical exceeded the TTLC.

<sup>c</sup> STLC = soluble threshold limit concentration. A waste would be considered hazardous by state regulations if the soluble concentration of a chemical exceeded the STLC determined by a waste extraction test which involves a 10-to-1 dilution of the sample. Because of this, the total concentration of a substance would need to exceed 10 times the regulatory level for the soluble concentration to possibly exceed the STLC.

<sup>d</sup> Laboratories typically analyze for total chromium without distinguishing between the trivalent and hexavalent forms unless there is a need to make this distinction. For this project, it would be necessary to determine the concentrations of hexavalent chromium to determine if the waste disposal criteria for this form of chromium would be exceeded.

The maximum soil concentrations identified in Table 8.13-5 are based on the maximum concentration identified in a single sample obtained as part of previous investigations and it is possible that these concentrations are representative of the soil from small portions of the project site; larger quantities of soil excavated for construction of the proposed buildings would likely exhibit different chemical concentrations. The required disposal method for the soil would be dependent on sampling of the soil once it is excavated to determine its hazardous characteristics. Soil classified as hazardous would require disposal at a Class I disposal facility. Class I land disposal facilities can accept hazardous wastes with chemical levels below the federal land disposal restriction (land ban) treatment standards. Class II and III facilities can accept non-hazardous wastes that meet acceptance criteria determined by the state for organic and inorganic compounds. Each landfill has individual acceptance criteria and the appropriate disposal site for a waste will be determined on the basis of the classification of the waste and individual landfill acceptance criteria. Class II and III landfills in the Bay Area have acceptance criteria for lead that are lower than the TCLP or STLC.

Title 40 of the Code of Federal Regulations, Section 268.40, and Title 22 of the California Code of Regulations, Chapter 18, Article 3 identify specific hazardous wastes that are restricted for land disposal. A prohibited waste identified in these regulations may be land disposed only if it meets specified treatment standards. If the soil excavated during construction of the SFERP facility exhibited the characteristic of toxicity for lead based on the TCLP, the soil would need to be treated to reduce soluble lead concentrations. The universal treatment standard (UTS) for wastes containing lead is 0.75 mg/L as measured by

TCLP. However, Title 40 of the Code of Federal Regulations, Section 268.49 specifies alternative LDR treatment standards for contaminated soil. The alternative treatment standards specify that, prior to placement in a land disposal unit, all constituents subject to treatment must achieve a 90 percent reduction in constituent concentrations or a reduction in constituent concentrations to less than 10 times the UTS. In the case of soils exhibiting the toxicity characteristic for lead, the alternate soil treatment standard would be 7.5 mg/L. Other UTS could apply, depending on the concentration of specific chemicals in the soil and the soil could also contain Underlying Hazardous Constituents (UHCs) defined in Title 40 of the Code of Federal Regulations, Section 268.48, which could require treatment to UTSs. Treatment must be conducted by a DTSC permitted contractor or utilizing a DTSC permitted treatment unit.

The California Health and Safety Code, Section 25157.8 also specifies that waste disposed in California that contains lead in excess of 350 ppm can only be disposed in a Class I hazardous waste disposal facility, unless the RWQCB issues a variance to the waste disposal facility for the acceptance of the waste, modifies the waste disposal facility's permit to accept the waste, amends the waste disposal facility's waste discharge requirements to specifically allow disposal of the waste, or approves disposal of the waste at the site of generation.

Soil with total petroleum hydrocarbon concentrations above the detection limit must be disposed of at an appropriate landfill facility or treated to reduce the levels of petroleum hydrocarbons in the soil. In general, soil with total petroleum hydrocarbon levels up to 100 milligrams per kilogram (mg/kg) can be disposed of at a Class III disposal facility. If the concentration is between 100 and 1,000 mg/kg, it can be disposed of at a Class II disposal facility; and if the concentration is greater than 1,000 mg/kg, Class I disposal would be required.

Soil containing greater than 1 percent friable asbestos would be considered hazardous and require disposal as a hazardous waste. "Friable" is defined as easily crumbled or reduced to powder by hand pressure. However, in many cases, naturally occurring asbestos is tightly bound into the rock and is not friable. In this case, or if the asbestos content were less than 1 percent, the soil would not be considered a hazardous waste based on asbestos concentrations.

The contractor would use existing soil data to identify potential "hot spots" containing higher chemical concentrations, and would segregate this soil from soil expected to contain lower chemical concentrations to minimize the quantities of soil requiring disposal as a hazardous waste.

***Storage Requirements.*** Title 40 of the Code of Federal Regulations, Sections 264.551 and 264.554, specifies requirements for construction and monitoring of temporary storage of remediation waste exhibiting RCRA characteristics. Waste staging piles may be used to store remediation waste for up to 2 years, as long as measures are implemented to protect human health and the environment. These measures include the following:

- The waste pile must have a liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface, soil, groundwater or surface water.

- A water collection and removal system located immediately above the liner that is designed, constructed, maintained, and operated to collect and remove water from the pile.
- During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections.
- While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any damage or improper run-off.

The California Health and Safety Code, Section 25123.3, defines remediation waste storage as the temporary accumulation of non-RCRA contaminated soil that is generated and held on-site, and that is accumulated for the purpose of on-site treatment pursuant to a certified, authorized or permitted treatment method. If soil excavated for construction of the SFERP facility is classified as a state or federal hazardous waste, temporary storage of the excavated soil would have to comply with the appropriate state and federal regulations.

***Asbestos-Containing Soil.*** The CARB Asbestos ATCM would apply to excavation within rock or soil containing naturally occurring asbestos. If the project disturbs one acre or less of asbestos-containing materials, the City will implement standard dust mitigation measures specified in the ATCM before construction begins, and maintain each measure throughout the duration of the construction project. If the project disturbs more than one acre of asbestos-containing materials, the City will prepare an asbestos dust mitigation plan specifying measures that would be taken to ensure that no visible dust crosses the property boundary. The asbestos dust mitigation plan will be submitted to and approved by the BAAQMD prior to the beginning of construction, and the City will ensure the implementation of all measures throughout the construction project. In addition, the BAAQMD may require air monitoring to monitor for offsite migration of asbestos dust during construction activities and may change the plan on the basis of the air monitoring results.

#### 8.13.6.1.3 Nonhazardous Solid and Liquid Wastes

***Solid Wastes.*** The City will contract with a hauler and require that disposal of the waste be undertaken in accordance with applicable laws (a 1932 ordinance that regulates refuse collection in San Francisco does not apply to the City and County of San Francisco). During construction, a private waste hauler retained by the general contractor would pick up non-hazardous debris. The City would require the hauler to meet the City recycling goals in the construction contracts prepared for the project. Nonrecyclable materials would be disposed of at a regional solid waste disposal facility.

***Wastewater.*** Sanitary waste will be collected in portable, self-contained toilets. Stormwater runoff will be managed in accordance with an Erosion and Sediment Control Plan prepared for the project and approved by the San Francisco Bureau of Environmental Regulation and Management prior to the start of construction as discussed in Subsection 8.14, Water Resources.

Other waste waters produced during construction could be considered hazardous depending on the concentration of specific chemicals identified. The wastewaters would be sampled and, if characterized as hazardous, would be disposed of as a hazardous waste as described in Subsection 8.13.6.1.3. If the waste water is not hazardous, it would be

discharged to the combined sewer system in accordance with permit requirements issued by the City discussed in Subsection 8.14, Water Resources; the water would be treated prior to discharge to the sewer, if substances are present at concentrations greater than the City's permit requirements.

**8.13.6.1.4 Hazardous Liquid and Solid Wastes.** All wastes generated by the construction contractor will be handled in compliance with all applicable federal, state, and local laws and regulations, including licensing, training of personnel, accumulation limits and times, and reporting and record keeping. The hazardous waste will be collected in satellite accumulation containers near the points of generation. This waste will be moved daily to the contractor's 90-day hazardous waste storage area, located at the plant construction laydown area. The waste will be transported to a permitted hazardous waste management facility by licensed waste haulers, before expiration of the 90-day storage limit. Waste handling facilities and activities will be subject to inspection by the SFDPH in accordance with Article 22 of the San Francisco Health Code to ensure that handling of hazardous wastes is in accordance with applicable laws and regulations. Hazardous wastes generated during construction will also be disclosed in the Certificate of Registration and Hazardous Materials Business Plan prepared in accordance with Article 21 of the San Francisco Health Code which are further described in Subsection 8.12, Hazardous Materials.

#### **8.13.6.2 Operation Phase**

Handling requirements and mitigation measures for the handling of wastes during operation are described in the following subsections. In addition, requirements for the management of any hazardous wastes in the soil following construction are identified.

##### **8.13.6.2.1 Nonhazardous Solid and Liquid Wastes.**

***Solid Wastes.*** For disposal of nonhazardous solid wastes during operation, the City will identify waste collection methods to work towards the City and County goals of 75 percent recycling by 2010 and 100 percent recycling by 2020 (Malatesta, 2003). This will include incorporating recycling facilities directly into the project design and development of the best management approach to achieve the recycling goals of the City.

***Nonhazardous Wastewater.*** Process wastewater collected in the wastewater collection system and sanitary sewage from the SFERP facility will be discharged to the SEWPCP in accordance with Article 4.1 of the San Francisco Public Works Code. The wastewater will be discharged via a connection to the San Francisco combined sewer system on 23rd Street under a permit from the City, as described in Subsection 8.14, Water Resources.

**8.13.6.2.2 Hazardous Wastes.** In accordance with the Hazardous Waste Source Reduction and Management Review Act, the City will develop a Hazardous Waste Source Reduction and Evaluation Plan identifying methods to reduce hazardous waste generation if threshold quantities of hazardous waste are generated. Hazardous waste generation and storage will comply with the requirements of Article 22 of the San Francisco Health Code and applicable federal and state laws. Compliance with these laws will avoid potential effects on human health and the environment from handling and disposing of hazardous wastes. The following general procedures will be employed in accordance with applicable laws:

- The SFERP will be classified as a hazardous waste generator and the City will obtain a site specific Cal-EPA ID number that will be used to manifest hazardous waste from the

SFERP facility. Hazardous waste from the SFERP facility will be stored on-site for less than 90 days before off-site disposal or recycling.

- Hazardous wastes will be accumulated at the generating facility according to CCR Title 22 requirements for satellite accumulation.
- The hazardous waste storage area will be constructed in accordance with applicable hazardous materials regulations discussed in Subsection 8.12, Hazardous Materials. Provisions for storage include appropriately segregated storage areas surrounded by berms to contain leaks and spills. The bermed areas will be sized to hold the full contents of the largest single container and, if not roofed, sized to allow for the rainfall from a 24-hour, 25-year storm. These areas will be inspected daily.
- Hazardous wastes will be collected by a licensed hazardous waste hauler, using a hazardous waste manifest. Wastes will only be shipped to an authorized hazardous waste management facilities. Biannual hazardous waste generator reports will be prepared and submitted to the DTSC. Copies of manifests, reports, waste analyses, and other documents will be kept on-site and will remain accessible for inspection for at least 3 years.
- Employees will be trained in hazardous waste handling procedures, spill contingencies, and waste minimization.
- Procedures will be developed to reduce the quantity of hazardous waste generated. Nonhazardous materials will be used instead of hazardous materials whenever practical, and wastes will be recycled whenever practical.
- Specifically, hazardous waste handling will include the following practices. Handling of hazardous wastes in this way will minimize the quantity of waste deposited to landfills:

Waste lubricating oil will be recovered and recycled by a waste oil recycling contractor, such as Evergreen Oil, Inc. Spent oil filters and oily rags will be recycled. Spent SCR catalysts will be recycled by the supplier, if possible, or disposed of at a State-certified treatment and disposal facility. Laboratory analysis wastes will be recycled or treated, if possible, or disposed of in a Class I landfill.

Waste handling facilities and activities at the SFERP facility will be subject to inspection by the SFDPH in accordance with Article 22 of the San Francisco Health Code to ensure handling of hazardous wastes in accordance with applicable laws and regulations. As discussed in Subsection 8.12, the facility will be required to file a Certificate of Registration and develop a Hazardous Materials Business Plan (overseen by the SFDPH) that documents all hazardous materials/wastes stored, used and disposed of at the site.

**8.13.6.2.3 Hazardous Waste in Soil.** Depending on the site mitigation implemented in accordance with Article 22A, soils containing hazardous constituents could be left in the soil, provided that containment measures (such as a cap) are put in place to prevent exposure to the hazardous materials under normal operating controls. In this case, the SFDPH would require preparation of a maintenance plan and implementation of specific activities that maintain the integrity of any containment measures used to prevent exposure to hazardous waste left in the soil and ensure that unacceptable exposure to the hazardous



waste does not occur. The activities would include requirements for notification of the SFDPH if the containment measures are to be disturbed; preparation of a health and safety plan; compliance with applicable state, federal, and local regulations; repair of any changes made to the controls that would allow exposure to hazardous materials; wetting of the soil and control of stormwater run-on and runoff from exposed soil areas; appropriate disposal of any excavated material; and regular reporting of maintenance activities to the SFDPH. These requirements would be included in a deed restriction for the site, as appropriate.

#### **8.13.6.3 Facility Closure**

When the SFERP facility is closed, both nonhazardous and hazardous wastes must be handled properly. Closure can be temporary or permanent. Temporary closure would be for a period of time greater than the time required for normal maintenance, including overhaul or replacement of the combustion turbines. Causes for temporary closure could be a disruption in the supply of natural gas, flooding of the site, or damage to the plant from earthquake, fire, storm, or other natural causes. Permanent closure would consist of a cessation in operations with no intent to restart operations and could result from the age of the plant, damage to the plant beyond repair, economic conditions, a policy decision by the City, or other unforeseen reasons. Handling of wastes for these two types of closure are discussed below.

**8.13.6.3.1 Temporary Closure.** For a temporary closure, where there is no release of hazardous materials, facility security will be deployed on a 24-hour basis, and the CEC will be notified. Depending on the length of shutdown necessary, a contingency plan for the temporary cessation of operations will be implemented. This plan will be prepared as described in the plant closure section. The plan will be developed to ensure conformance with all applicable LORS and the protection of public health and safety and the environment. The plan, depending on the expected duration of the shutdown, could include draining all chemicals from storage tanks and other equipment and the safe shutdown of all equipment. All wastes will be disposed of according to applicable LORS, as discussed in Subsection 8.13.2.

Where the temporary closure is in response to facility damage, or where there is a release or threatened release of hazardous waste or materials into the environment, procedures will be followed as set forth in a hazardous materials business plan (HMBP), described in Subsection 8.12.8.2.1, or a risk management plan (RMP), described in Subsection 8.12.8.2.2. Procedures to be implemented include methods to control releases, notification of applicable authorities and the public, emergency response, and training for generating facility personnel in responding to and controlling releases of hazardous materials and hazardous waste. Once the immediate problem of the release is contained and cleaned up, temporary closure will proceed as described for a closure where there is no release of hazardous materials or waste.

**8.13.6.3.2 Permanent Closure.** When the facility is permanently closed, the SFPUC will prepare a closure plan in accordance with the requirements of Section 1154 of Article 21 of the San Francisco Health Code. The plan will address the need for further maintenance of the closed facility; address methods to ensure that the threat to public health and the environment from residual hazardous materials is eliminated; and address methods to ensure that hazardous materials used at the facility are appropriately removed, disposed of,

neutralized, or reused. The closure plan will be submitted to the SFDPH for approval a minimum of 30 days prior to closure and at that time, the SFDPH may add additional requirements for closure. The requirements specified in this closure plan will be incorporated into the general closure plan prepared for the facility that will attempt to maximize the recycling of facility components (see Section 4.0). Unused chemicals will be sold back to the suppliers or other purchasers or users. All equipment containing chemicals will be drained and shut down to protect public health and safety, and the environment. All nonhazardous wastes will be collected and disposed of in appropriate landfills or waste collection facilities. All hazardous wastes will be disposed of according to applicable LORS. The site will be secured 24 hours per day during the SFERP decommissioning activities.

### 8.13.7 Cumulative Impacts

The SFERP facility will generate nonhazardous solid waste that will add to the total waste generated in San Francisco County and in California. However, the facility will implement measures to comply with the City and County of San Francisco recycling goals of 75 percent recycling by 2010 and 100 percent recycling by 2020. Implementation of these measures would reduce the requirement for landfilling of wastes and there is adequate landfill capacity to accommodate the disposal of nonrecyclable materials until 2020 when all wastes would be recycled. With achievement of these recycling goals, it is estimated that SFERP will generate approximately 14,750 tons of solid waste for disposal during construction, and about 5 tons a year from operations until 100 percent recycling is achieved in 2020. Compared to the total amount of 700,000 to 800,000 tons of solid waste landfilled from San Francisco County in the year 2002 (Drew, 2003), the SFERP contribution will represent a minimal contribution to the total county waste generation. Therefore, the impact of the project on solid waste recycling and disposal capacity is not significant.

Hazardous waste generated will consist of waste lubricating oil, filters, and rags; spent SCR catalysts; and laboratory analysis wastes. The City will comply with the stringent LORS requirements for generation and handling of hazardous wastes, including source reduction, recycling, treatment and disposal. Further, the quantities of hazardous waste generated during construction and operation are small. Compared to the approximately 20 million cubic yard existing and anticipated capacity of the existing hazardous waste disposal facilities, the disposal capacity in California for hazardous wastes is more than adequate. Therefore, the effect of SFERP on hazardous waste recycling, treatment, and disposal capability is not significant.

### 8.13.8 Monitoring

The City will incorporate reporting requirements into the waste collection contract requiring reporting to demonstrate compliance with City waste diversion goals. Compliance with requirements for discharge of nonhazardous wastewater during construction and operation would be tracked through regular reporting to the San Francisco Department of Public Works in accordance with Article 4.1 of the Public Works Code, described in Subsection 8.14, Water Resources.

Hazardous waste reduction efforts will be documented in the hazardous waste performance report required by the Hazardous Waste Source Reduction and Management Review Act of 1989, if threshold quantities of hazardous waste are generated. Hazardous waste handling

at the site will be subject to regular inspections by the SFDPH, the CUPA (Certified Unified Program Agency) for the City and County of San Francisco, which could cite the facility for noncompliance with applicable regulatory requirements. Any hazardous wastes shipped for off-site disposal or treatment will be manifested in accordance with state and federal laws, and the DTSC will confirm legal disposal or recycling of the hazardous wastes through reconciliation of waste manifests.

Compliance with site mitigation requirements will be documented in the certification report submitted to the SFDPH, DTSC, and SFBRWQCB for review and approval upon completion of the site mitigation. If containment measures (such as a cap) are instituted to prevent exposure to the hazardous wastes left in the soil and groundwater during operation, requirements would include implementation of a maintenance plan and specific activities described in Subsection 8.13.6.2.3, and notification of the SFDPH if the containment measures are to be disturbed. These measures would provide the monitoring required to ensure that unacceptable exposure to hazardous wastes in the soil and groundwater does not occur during operation.

### 8.13.9 Involved Agencies

Several agencies, including USEPA at the federal level and the DTSC and SFBRWQCB at the state level, regulate nonhazardous and hazardous waste and will be involved in the regulation of the waste generated by the SFERP. The waste laws, however, are administered and enforced primarily through the SFDPH, which is the designated CUPA for San Francisco. Recycling of non-hazardous waste is managed by the San Francisco Department of the Environment. The persons to contact for nonhazardous and hazardous waste management are listed in Table 8.13-6.

TABLE 8.13-6  
Agency Contacts for SFERP Waste Management

Topic	Agency	Address	Contact	Title	Telephone
<b>Nonhazardous Waste</b>					
Solid Waste	San Francisco Department of Public Health	1390 Market St., Suite 210 San Francisco, CA 94102	Henry Louie	Local Enforcement Agency Program Manager	(415) 252-3980
Recycling	San Francisco Department of the Environment	11 Grove St. San Francisco, CA	Kevin Drew	Residential and Special Projects Recycling Coordinator	(415) 355-3700
<b>Hazardous Waste</b>					
Hazardous Waste Compliance and Inspections	San Francisco Department of Public Health	1390 Market St., Suite 210 San Francisco, CA 94102	Sue Cone	Program Manager	(415) 252-3991

TABLE 8.13-6  
Agency Contacts for SFERP Waste Management

Topic	Agency	Address	Contact	Title	Telephone
Article 22A Compliance	San Francisco Department of Public Health	1390 Market St., Suite 210 San Francisco, CA 94102	Scott Nakamura	Program Manager	(415) 252-3994

### 8.13.10 Permits Required and Permit Schedule.

The storage of hazardous wastes at the SFERP facility would be included in the HMBP submitted to the SFDPH as described in Section 8.12, Hazardous Materials. In addition, the San Francisco Fire Department could require the permits listed in Table 8.13-7.

TABLE 8.13-7  
Permits Required and Permit Schedule for SFERP Waste Management

Permit	Applicability	Schedule for Permit
Hazardous Materials Use and Storage Permit	California Fire Code requires that businesses obtain permits for the use and storage of specified hazardous materials.	Before storing regulated hazardous wastes at the site.
Asbestos Fire Permit	California Fire Code requires an asbestos fire permit for construction, alteration, or demolition of buildings that contain asbestos or asbestos-containing materials which were used as a feature of the building's fire resistance.	24 hours prior to commencement and closure of asbestos removal operations.
Tank Removal Permit	The San Francisco Fire Department requires a permit for removal of tanks.	Prior to removal of an above ground storage tank.

### 8.13.11 References

California Air Resources Board, Regulatory Advisory. 2002. *Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations*. July 29.

CIWMB (California Integrated Waste Management Board). 2003a. "Inventory of Solid Waste Facilities Violating State Minimum Standards." November 14.

CIWMB. 2003b. Solid Waste Information System (SWIS) Database. December 16.

Drew, K. 2003. Personal communication between K. Drew, Residential and Special Projects Recycling Coordinator for the San Francisco Department of the Environment, and Mary McDonald of Orion Environmental Associates. December 16.

DTSC (Department of Toxic Substance Control). 2003a. *California Commercial Offsite Hazardous Waste Management Facilities*. October 20.

DTSC (Department of Toxic Substances Control). 2003b. Hazardous Waste Facility Permit for Chemical Waste Management, Incorporated, Kettleman Hills Facility. Permit Number 02-SAC-03. June 16.

Gius, F. 2004. Email from F. Gius of the Department of Toxic Substances Control to Mary McDonald of Orion Environmental Associates. February 11.

Malatesta, M. 2003. Personal communication between M. Malatesta, Operations Manager of the Roll Off Division, Golden Gate Disposal and Recycling, and Mary McDonald of Orion Environmental Associates. December 18.

St. John, M. 2003. Personal communication between M. St. John, Environmental Coordinator and Regulatory Specialist for Altamont Landfill, and Mary McDonald of Orion Environmental Associates. December 16.

VISTA Information Solutions, 2000. *Site Assessment Report Plus*. February 11.